COMMENTS

The enclosed is responsive to the Examiner's Office Action mailed on July 17, 2002. At the time the Examiner mailed the Office Action claims 1-87 were pending. By way of the present response, the Applicant has: 1) amended claims 1, 3, 6, 7, 15-17, 19, 20, 25, 26, 28, 31, 34, 36, 38, 39, 41, 58, 59, 73, 74 and 81-83; and 2) added new claims 88 -114. As such, claims 1 through 114 are presently pending. The Applicant respectfully requests reconsideration of the present application and the allowance of claims 1 through 114.

The Examiner objected to combination of claims 54-57, 61-68 and 69-72, 76-82 under 37 CFR 1.75 as being a substantial duplicate thereof. The Examiner's attention is drawn to the precise wording of independent claims 54 and 69. Note that their respective wordings are different as independent claim 54 comprises the phrase "data that has been received from a network"; and, by contrast, independent claim 69 comprises the phrase "data that is to be transmitted over a network". The Applicant respectfully submits that, in light of these "non slight" differences in claim language, independent claim 54 and 69 are not substantial duplicates of one another. That is, as claim 54 is directed to data that has been received and as claim 69 is directed to data that is to be transmitted, claims 54 and 69 cannot be deemed so close in content as to "cover the same thing" MPEP 706.03(k). As such, the Examiner's objection is improper and should be removed.

The Examiner also rejected claim 87 as a single means claim. According to the Applicant's records claim 87, as it was presented in the Response to Office Action filed on 05/03/02, did not even recite the term "means". Nevertheless, claim 87 has presently been amended so as to depend from claim 83 (which is a means claim having proper form). As such, the Examiner's rejection should be removed.

The Examiner has also maintained the rejection of independent claims 1, 24, 41 and 54 under 35 USC 102(b) as being anticipated by US Patent No. 5,436,955 (hereinafter, "Kaewell"). To anticipate a claim, the reference must teach every element of the claim, MPEP 2131. The Applicant respectfully submits that: 1) the element "*continuously broadcasting* a plurality of firmware algorithms" in independent claim 1 is not disclosed by Kaewell; 2) the element "at least one channel over which a plurality of firmware algorithms are *continuously broadcasted*" in independent claim 25 is not disclosed by Kaewell; 3) the element "the serial bus comprising a plurality of channels over which a plurality of firmware algorithms are *continuously broadcasted*" in claim 41 is not disclosed by Kaewell; and, 4) the element "selectively monitoring for and receiving at least one firmware algorithm from amongst a plurality of *continuously broadcasted* firmware algorithms" of claim 54 is not disclosed by Kaewell. As such, it is the Applicant's position that independent claims 1, 24, 41 and 54 are patentable over Kaewell.

Given that the Examiner continues to maintain the same theory of rejection, it is apparent that the Examiner: 1) would rather have the Applicant accept narrower claims than the Applicant is entitled to (e.g., by incorporating the subject matter of one or more objected to dependent claims into the independent claims of the present application); or, 2) does not understand the subject being claimed by the Applicant.

If it is the former, and although the PTO and patent Applicants frequently engage in negotiations in order to move the patent prosecution forward, with respect to the present application, the Applicant wishes to make it clear to the Examiner that the Applicant will promptly file a Notice of Appeal and pursue a course of action through the appellate process should the Examiner continue to maintain the present theory of rejection.

If it is the latter, the Examiner's confusion seems to be that the Examiner does not understand that the subject matter being claimed by Applicant is directed to the manner in which a firmware algorithm (i.e., a software routine that can be executed by a Digital Signal Processor (DSP)) is obtained by a DSP. Better said, in order for a "valid" theory of rejection to exist, as a minimum threshold, the prior art material must at least disclose "something" as to how a DSP obtains the software that it executes. As the Examiner continues to stress prior art that has no relation to the manner in which a DSP obtains the software

that it executes, the Examiner's theory of rejection continues to blatantly "miss the point".

With respect to the Examiner's theory of rejection (provided on pages 3-4 of the Examiner's Office Action mailed on 7/17/02) and response to arguments (provided on pages 8-9 of the Examiner's Office Action mailed on 7/17/02), the following perspectives are unquestionably correct:

1) Figures 2 and 5 of Kaewell merely disclose a Slot Processing Module (SPM) 10 that is designed to handle information that was received through a wireless broadcast (which, by itself, is an irrelevant consideration);

2) Neither the RX DSP or the TX DSP of Figure 3 use firmware that was received from a continuous broadcasting of firmware (and, their ability to process data at a continuous rate of 20 k-symbols/second is an irrelevant consideration);

3) 1) and 2) above in combination simply do not disclose the continuous broadcasting of firmware to a DSP;

4) Col. 5, line 31 through Col. 6, line 29 of Kaewell merely state that firmware is downloaded to a DSP which, although related to the manner in which a DSP receives firmware, when viewed in a light that is least favorable to the

Applicant, merely discloses what the Applicant has already acknowledged as being prior art on page 4, lines 12 – 18 of the Applicant's detailed description;

5) Col. 4, lines 24 – 30 of Kaewell merely disclose the uses of a DSP (e.g., compression, pre-emphasis, FM modulation, etc.) and that the inputs/outputs of a DSP are retrieved/stored from/to memory – nothing is said as to how the DSP obtains its firmware;

6) the disclosed material of Col. 4, lines 4 –19 of Kaewell has already been preemptively discussed and dismissed by the Applicant's discussion of Col. 4. lines 4-21 of Kaewell on page 21 of the Applicant's response filed on May 3, 2002 – again, no where is it taught or suggested by Kaewell that firmware is continuously broadcasted to a DSP;

The Examiner also cited from Kaewell each of column 2, line 65 to column 3, line 1; column 3, lines 9-29; column 4, lines 28-30; and column 4 lines 53-68 as disclosing the continual broadcasting of firmware. See, the Examiner's Office Action, pgs. 3-4. An examination and discussion of each of these sections of Kaewell, as originally filed on May 3, 2002 is provided immediately below.

Column 2, line 65 to Column 3, line 1 of Kaewell provides:

> The effective sampling rate of the digital cellular system equipment is 48.6 k-samples/sec. and, therefore the 8 k-

sample/sec processed speech signal has to be interpolated up to the 48.6 k-sample/sec. rate.

Column 3, lines 9 - 29 of Kaewell provides:

> Fig. **2** shows the basic components of a single analog channel unit at a cell site base station. The hardware comprises a Modulator/Downconverter Module (MDM) **9** and a Slot Processing Module (SPM) **10**. The MDM **9** is connected to receiving and transmitting antennaes and performs all the RF and IF processing, while the SPM **10** performs all the baseband processing for the channel unit. Two receiving antennaes A and B are shown providing input signals to the MDM **9**, these being for a space diversity reception system, and the MDM **9** provides an output signal to a single transmitting antennae. Although not shown in Fig. **2**, the SPM **10** can accommodate two MDMs **9**, supporting up to two transmitting channels and four receiving channels.

Column 4, lines 28-30 of Kaewell provides:

> The resulting output from these processes is stored in the DPRAMs to be fetched by the Tx_DSP **15**.

The three above quoted portions of Kaewell simply do not relate to the manner in which firmware is obtained by a DSP. The first quotation (column 2, line 65 to column 3, line 1) simply discusses the data rate of a voice channel. The second quotation (column 3, lines 9-29) simply states that a cell phone base station is comprised of a wireless modulation/demodulation unit (MDM) and a

signal processing unit (SPM). The third quotation (column 4, lines 28-30) states that the output values of DSP are stored in a memory. Throughout either of these quotations, the word "firmware" is not used; and, the manner in which a DSP's firmware is obtained by a DSP is not discussed. As such, it is impossible for column 2, line 65 to column 3, line 1 of Kaewell; column 3, lines 9-29 of Kaewell; or, column 4, lines 28-30 of Kaewell to disclose or even suggest the continual broadcasting of firmware to a DSP. Thus, use of these sections of Kaewell as a basis for rejecting the Applicant's claims with respect to their claiming the continual broadcasting of firmware to a DSP is improper; and, likewise, the Applicant's claims are patentable over these sections of Kaewell.

Column 4 lines 53-68 of Kaewell provides:

> The receive signal is processed by the Rx_DSPs **11** and **12** under the control of the analog firmware to perform the functions of sampling gate combiner **52**. The sampling gate combiner function **52** performs a sampling rate conversion of the 48.6 k-sample/sec. rate to 40.0 k-samples/-sec. to give four samples per FSK symbol and to allow the eventual integer decimation of the speech signals down to the 8 k-sample/sec. PCM (pulse code modulation) rate for interfacing to the T1 transmission system. The speech signals are then further processed, again by the Rx DSPs **11** and **12** under the control of the analog firmware, in voice processing functions **53**. Voice processing function **53** performs the decimation of the speech signals to the T1 lines via the SPDF.

The above quoted portion of Kaewell, again, simply does not relate to the manner in which firmware is obtained by a DSP. The above quotation discloses, at most, that different functions may be performed by a DSP with firmware (e.g.,

a gate combiner function and a voice processing function). Better said, this portion of Kaewell relates more to how firmware is used rather than to how it is obtained. As such, it is impossible for column 4 lines 53-68 of Kaewell to disclose or even suggest the continual broadcasting of firmware to a DSP. Thus, use of this section of Kaewell as a basis for rejecting the Applicant's claims with respect to their claiming the continual broadcasting of firmware to a DSP is improper; and, likewise, the Applicant's claims are patentable over this section of Kaewell.

For at least these reasons, the Applicant respectfully requests reconsideration of the present application and the allowance of claims 1 through 114.

If there are any additional charges, please charge Deposit Account No. 02-2666.

Respectfully submitted,

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CLAIM AMENDMENTS SHOWING CHANGES

For the Examiner's convenience, the following is a list of all claims including those that have not been amended in the present response to Office Action.

Please amend claims 1, 3, 6, 7, 15-17, 19, 20, 25, 26, 28, 31, 34, 36, 38, 39, 41, 58, 59, 73, 74 and 81-83 as provided below.

1. (twice amended) A method for supporting digital signal processing (DSP) of a plurality of data types, the method comprising:

continuously broadcasting a plurality of firmware algorithms to a plurality of DSP engines[over a channelized serial bus]; and

selectively monitoring for and receiving at least one firmware algorithm of the plurality of firmware algorithms by at least one of the plurality of DSP engines, wherein the at least one firmware algorithm is used to process data of at least one corresponding data type received by the at least one of the plurality of DSP engines over at least one data line.

2. (once amended) The method of claim 1, further comprising:

receiving at least one pulse coded modulation (PCM) data stream from a public switched telephone network (PSTN);

generating at least one packet of data from the PCM data stream using the received at least one firmware algorithm; and

transmitting the at least one packet of data over an Internet Protocol (IP) network.

3. (twice amended) The method of claim 1, further comprising:

receiving at least one packet of data from an IP network;

generating at least one PCM data stream from the at least one packet of data using the received at least one firmware algorithm; and

transmitting the at least one PCM data stream over a PSTN.

4. (unchanged) The method of claim 1, wherein the at least one data line comprises at least one bidirectional PCM data stream.

5. (unchanged) The method of claim 1, wherein the at least one data line comprises at least one bidirectional host bus.

6. (once amended) The method of claim 1, wherein the plurality of firmware algorithms are continuously broadcasted to [a]the plurality of service DSP engines by a master DSP engine resident in a processor.

7. (once amended) The method of claim 6, wherein the plurality of firmware algorithms are continuously broadcasted to the plurality of service DSP engines over a channelized serial bus[comprises eight channels].

8. (once amended) The method of claim 7, wherein the selectively monitoring for and receiving at least one firmware algorithm comprises:

determining a data type of the data received into at least one of the plurality of service DSP engines;

determining at least one firmware algorithm required to process the received data;

determining an address of at least one channel of the serial bus on which the required at least one firmware algorithm is available.

9. (once amended) The method of claim 8, wherein the selectively monitoring for and receiving at least one firmware algorithm further comprises unmasking a bit of an interrupt mask in the at least one of the plurality of service DSP engines, the unmasked bit corresponding to the address of at least one channel of the serial bus on which the required at least one firmware algorithm is transmitted.

10. (once amended) The method of claim 9, wherein the selectively monitoring for and receiving at least one firmware algorithm further comprises:

executing at least one interrupt service routine in response to receiving an interrupt signal corresponding to the unmasked interrupt bit;

receiving the at least one firmware algorithm in response to execution of the interrupt service routine; and

storing the received at least one firmware algorithm in a memory of the service DSP.

11. (unchanged) The method of claim 8, wherein each service DSP memory comprises data correlating each of the plurality of firmware algorithms with a serial bus channel on which each of the plurality of firmware algorithms are transmitted.

12. (unchanged) The method of claim 8, wherein the data correlating each of the plurality of firmware algorithms with a serial bus channel on which each of the plurality of firmware algorithms are transmitted is downloaded to each service DSP engine from the processor.

13. (unchanged) The method of claim 8, wherein the data correlating each of the plurality of firmware algorithms with a serial bus channel on which each of the plurality of firmware algorithms are transmitted is hard-coded in each of the service DSP engines.

14. (unchanged) The method of claim 7, wherein each channel of the channelized serial bus transmits at least one firmware algorithm.

15. (once amended) [The method of claim 6, wherein the plurality of firmware algorithms are stored in a memory of the master DSP engine] The method of claim 7, wherein at least one algorithm is transmitted on a channel of the channelized serial bus.

16. (once amended) [The method of claim 1, wherein the continuous broadcast is repetitive] The method of claim 7, wherein an algorithm is transmitted using at least one channel of the channelized serial bus.

17. (once amended) [The method of claim 1, wherein the plurality of data types comprise modem data, voice data, audio data, video data, and facsimile data] The method of claim 6, wherein the plurality of firmware algorithms are stored in a memory of the master DSP engine.

18. (unchanged) The method of claim 1, wherein each DSP engine comprises at least one channel.

19. (once amended) [The method of claim 7, wherein at least one algorithm is transmitted on a channel of the channelized serial bus] The method of claim 1, wherein the continuous broadcast is repetitive.

20. (once amended) [The method of claim 7, wherein an algorithm is transmitted using at least one channel of the channelized serial bus] The method of claim 1, wherein the plurality of data types comprise modem data, voice data, and facsimile data.

21. (unchanged) The method of claim 1, wherein each of the plurality of DSP engines comprise a memory for storing the at least one firmware algorithm.

22. (unchanged) The method of claim 1, wherein each of the plurality of firmware algorithms are broadcasted using at least one serial block, wherein each of the broadcasted at least one serial blocks comprise a portion of each of the plurality of firmware algorithms.

23. (unchanged) The method of claim 22, wherein the at least one serial block comprises 1024 information bits.

24. (unchanged) The method of claim 22, wherein the broadcast of each of the at least one serial blocks is preceded by a broadcast of an address signal, the address signal identifying the firmware algorithm of the broadcasted at least one serial block.

25. (once amended) An apparatus for supporting digital signal processing (DSP) of a plurality of data types, the apparatus comprising:

a serial bus comprising at least one channel over which a plurality of firmware algorithms are continuously broadcasted; and

a plurality of DSP engines coupled to the serial bus and to at least one data line, at least one of the plurality of DSP engines designed to selectively monitor[ing] for and [receiving]receive at least one firmware algorithm of the plurality of firmware algorithms that are continuously broadcasted, wherein the at least one firmware algorithm is used to process data received by the at least one of the plurality of DSP engines over the at least one data line.

26. (once amended) The apparatus of claim 25, further comprising a master DSP engine resident in a host processor, the master DSP engine coupled to the serial bus, wherein the master DSP engine continuously broadcasts the plurality of firmware algorithms to [a]the plurality of service DSP engines.

27. (unchanged) The apparatus of claim 26, wherein:

at least one pulse coded modulation (PCM) data stream is received from a public switched telephone network (PSTN);

at least one packet of data is generated from the PCM data stream using the received at least one firmware algorithm; and

the at least one packet of data is transmitted over an Internet Protocol (IP) network.

28. (once amended) The apparatus of claim [26]25, wherein:

at least one packet of data is received from an IP network;

at least one PCM data stream is generated from the at least one packet of data using the at least one firmware algorithm; and

the at least one PCM data stream is transmitted over a PSTN.

29. (unchanged) The apparatus of claim 25, wherein the at least one data line comprises at least one bidirectional PCM data stream.

30. (unchanged) The apparatus of claim 25, wherein the at least one data line comprises at least one bidirectional host bus.

31. (once amended) The apparatus of claim [26]25, wherein the plurality of service DSP engines selectively monitor for and receive the at least one firmware algorithm by:

determining a data type of the data received into at least one of the plurality of service DSP engines;

determining at least one firmware algorithm required to process the received data;

determining an address of at least one channel of the serial bus on which the required at least one firmware algorithm is available.

32. (unchanged) The apparatus of claim 31, wherein the plurality of service DSP engines selectively monitor for and receive the at least one firmware algorithm by unmasking a bit of an interrupt mask in the at least one of the plurality of service DSP engines, the unmasked bit corresponding to the address of at least one channel of the serial bus on which the required at least one firmware algorithm is transmitted.

33. (unchanged) The apparatus of claim 32, wherein the plurality of service DSP engines selectively monitor for and receive the at least one firmware algorithm by:

executing at least one interrupt service routine in response to receiving an interrupt signal corresponding to the unmasked interrupt bit;

receiving the at least one firmware algorithm in response to execution of the interrupt service routine; and

storing the received at least one firmware algorithm in a memory of the service DSP.

34. (once amended) The apparatus of claim 31, wherein the data correlating each of the plurality of firmware algorithms with a serial bus channel on which each of the plurality of firmware algorithms are transmitted is downloaded to each service DSP engine from [the]a host processor.

35. (unchanged) The apparatus of claim 25, wherein the data received by the at least one of the plurality of DSP engines comprises at least one channel of multiplexed data received over a public switched telephone network, the data having at least one of the plurality of data types.

36. (once amended) The apparatus of claim 25, wherein the plurality of data types comprise modem data, [voice data, audio data,] and facsimile data.

37. (unchanged) The apparatus of claim 25, wherein each DSP engine comprises at least one channel.

38. (once amended) The apparatus of claim [26]25, wherein at least one algorithm is transmitted on a channel of the [channelized] serial bus, the serial bus being a channelized serial bus.

39. (once amended) The apparatus of claim [26]25, wherein an algorithm is transmitted using at least one channel of the [channelized] serial bus, the serial bus being a channelized serial bus.

40. (unchanged) The apparatus of claim 25, wherein each of the plurality of firmware algorithms are broadcasted using at least one serial block, wherein each of the broadcasted at least one serial blocks comprise a portion of each of

the plurality of firmware algorithms, wherein the portion of each of each of the plurality of firmware algorithms comprises 1024 information bits.

41. (once amended) A multiservice digital signal processing (DSP) system comprising:

a processor coupled to at least one data line, the processor comprising a master DSP engine, wherein the at least one data line provides a plurality of data types;

a serial bus coupled to the master DSP engine, the serial bus comprising a plurality of channels over which a plurality of firmware algorithms are continuously broadcasted; and,

a plurality of service DSP engines coupled to the at least one data line and the serial bus, at least one of the plurality of service DSP engines being tailored to selectively monitor[ing] for and [receiving]receive at least one firmware algorithm over the serial bus, wherein the at least one firmware algorithm is used to process data of at least one corresponding data type received by the at least one of the plurality of service DSP engines over the at least one data line.

42. (unchanged) The system of claim 41, wherein:

at least one pulse coded modulation (PCM) data stream is received from a public switched telephone network (PSTN);

at least one packet of data is generated from the PCM data stream using the received at least one firmware algorithm; and

the at least one packet of data is transmitted over an Internet Protocol (IP) network.

43. (unchanged) The system of claim 41, wherein:

at least one packet of data is received from an IP network;

at least one PCM data stream is generated from the at least one packet of data using the at least one firmware algorithm; and

the at least one PCM data stream is transmitted over a PSTN.

44. (unchanged) The system of claim 41, wherein the at least one data line comprises at least one bidirectional PCM data stream.

45. (unchanged) The system of claim 41, wherein the at least one data line comprises at least one bidirectional host bus.

46. (unchanged) The system of claim 41, wherein the plurality of service DSP engines selectively monitor for and receive the at least one firmware algorithm by:

determining a data type of the data received into at least one of the plurality of service DSP engines and determining at least one firmware algorithm required to process the data type;

determining an address of at least one channel of the serial bus on which the required at least one firmware algorithm is available; and

unmasking a bit of an interrupt mask in the at least one of the plurality of service DSP engines, the unmasked bit corresponding to the address of at least one channel of the serial bus on which the required at least one firmware algorithm is transmitted.

47. (unchanged) The system of claim 46, wherein the plurality of service DSP engines selectively monitor for and receive the at least one firmware algorithm by:

executing at least one interrupt service routine in response to receiving an interrupt signal corresponding to the unmasked interrupt bit;

receiving the at least one firmware algorithm in response to execution of the interrupt service routine; and

storing the received at least one firmware algorithm in a memory of the service DSP.

48. (unchanged) The system of claim 46, wherein the data correlating each of the plurality of firmware algorithms with a serial bus channel on which each of the plurality of firmware algorithms are transmitted is downloaded to each service DSP engine from the processor.

49. (unchanged) The system of claim 41, wherein the data received by the at least one of the plurality of DSP engines comprises at least one channel of multiplexed data received over a public switched telephone network, the data

having at least one of the plurality of data types comprising modem data, voice data, audio data, and facsimile data.

50. (unchanged) The system of claim 41, wherein each service DSP engine comprises at least one channel.

51. (unchanged) The system of claim 41, wherein at least one algorithm is transmitted on a channel of the serial bus.

52. (unchanged) The system of claim 41, wherein an algorithm is transmitted using at least one channel of the serial bus.

53. (unchanged) The system of claim 41, wherein each of the plurality of firmware algorithms are broadcasted using at least one serial block, wherein each of the broadcasted at least one serial blocks comprise a portion of each of the plurality of firmware algorithms.

54. (amended) A computer readable medium containing executable instructions which, when executed by a digital signal processor (DSP), cause the DSP to perform a method, the method comprising:

selectively monitoring for and receiving at least one firmware algorithm from amongst a plurality of continuously broadcasted firmware algorithms; and

processing data that has been received from a network with the at least one firmware algorithm.

55. (amended) The computer readable medium of claim 54, wherein the processing further comprises generating at least one packet of data from a PCM data stream, the PCM data stream corresponding to the data that has been received from a network.

56. (amended) The computer readable medium of claim 55, wherein the network is a PSTN network.

57. (once amended) The computer readable medium of claim 54, wherein the data that has been received from a network further comprises audio data.

58. (twice amended) The computer readable medium of claim [57]54, wherein selectively monitoring for and receiving at least one firmware algorithm comprises:

determining a data type of the data that has been received from a network;

determining the at least one firmware algorithm [required to process the data that has been received from a network];

determining an address of [at least one] a broadcast channel [of a serial bus on which]where the [required] at least one firmware algorithm is available.

59. (twice amended) The computer readable medium of claim 58, wherein selectively monitoring for and receiving at least one firmware algorithm further comprises unmasking a bit of an interrupt mask, the unmasked bit corresponding to the address[of at least one channel of the serial bus on which the required at least one firmware algorithm is transmitted].

60. (amended) The computer readable medium of claim 59, wherein selectively monitoring for and receiving at least one firmware algorithm further comprises:

executing at least one interrupt service routine in response to receiving an interrupt signal corresponding to the unmasked interrupt bit;

receiving the at least one firmware algorithm in response to execution of the interrupt service routine; and

storing the received at least one firmware algorithm in a memory.

61. (amended) The computer readable medium of claim 54, wherein the data that has been received from a network further comprises voice data.

62. (amended) The computer readable medium of claim 54, wherein the data has been received from a network further comprises facsimile data.

63. (unchanged) The computer readable medium of claim 54 wherein the data that has been received from a network further comprises modem data.

64. (unchanged) The computer readable medium of claim 54 wherein the processing further comprises echo cancellation.

65. (unchanged) The computer readable medium of claim 54 wherein the processing further comprises voice coding.

66. (unchanged) The computer readable medium of claim 54 wherein the processing further comprises suppression of packet bandwidth utilization during voice silence.

67. (unchanged) The computer readable medium of claim 54 wherein the processing further comprises modem relay.

68. (unchanged) The computer readable medium of claim 54 wherein the processing further comprises facsimile relay.

69. (unchanged) A computer readable medium containing executable instructions which, when executed by a digital signal processor (DSP), cause the DSP to perform a method, the method comprising:

selectively monitoring for and receiving at least one firmware algorithm from amongst a plurality of continuously broadcasted firmware algorithms; and

processing data that is to be transmitted over a network with the at least one firmware algorithm.

70. (unchanged) The computer readable medium of claim 69 wherein the processing further comprises:

generating a PCM data stream from at least one packet of data, the PCM data stream corresponding to the data that is to be transmitted over a network.

71. (unchanged) The computer readable medium of claim 70 wherein the network is a PSTN network.

72. (unchanged) The computer readable medium of claim 69, wherein the data that is to be transmitted over a network further comprises audio data.

73. (once amended) The computer readable medium of claim 69, wherein selectively monitoring for and receiving at least one firmware algorithm comprises:

determining at least one firmware algorithm required to process the data that is to be transmitted over the network;

determining an address of [at least one]a broadcast channel [of a serial bus on which]where the required at least one firmware algorithm is available.

74. (once amended) The computer readable medium of claim 73, wherein selectively monitoring for and receiving at least one firmware algorithm further comprises unmasking a bit of an interrupt mask, the unmasked bit corresponding

to the address[of at least one channel of the serial bus on which the required at least one firmware algorithm is transmitted].

75. (unchanged) The computer readable medium of claim 74, wherein selectively monitoring for and receiving at least one firmware algorithm further comprises:

executing at least one interrupt service routine in response to receiving an interrupt signal corresponding to the unmasked interrupt bit;

receiving the at least one firmware algorithm in response to execution of the interrupt service routine; and

storing the received at least one firmware algorithm in a memory.

76. (unchanged) The computer readable medium of claim 69, wherein the data that is to be transmitted over a network further comprises voice data. 77.

(unchanged) The computer readable medium of claim 69, wherein the data is to be transmitted over a network further comprises facsimile data.

78. (unchanged) The computer readable medium of claim 69 wherein the data that is to be transmitted over a network further comprises modem data.

79. (unchanged) The computer readable medium of claim 69 wherein the processing further comprises echo cancellation.

80. (unchanged) The computer readable medium of claim 69 wherein the processing further comprises voice coding.

81. (once amended) The computer readable medium of claim [54]69 wherein the processing further comprises modem relay.

82. (once amended) The computer readable medium of claim [54]69 wherein the processing further comprises facsimile relay.

83. (once amended) An apparatus for supporting digital signal processing (DSP), the apparatus comprising:

means for continuously broadcasting a plurality of firmware algorithms to a plurality of DSP engines[over a channelized serial bus]; and

means for selectively monitoring for and receiving at least one firmware algorithm of the plurality of firmware algorithms by at least one of the plurality of DSP engines, wherein the at least one firmware algorithm is used to process data of at least one corresponding data type received by the at least one of the plurality of DSP engines over at least one data line.

84. (unchanged) The apparatus of claim 83, further comprising:

means for receiving at least one pulse coded modulation (PCM) data stream from a public switched telephone network (PSTN);

means for generating at least one packet of data from the PCM data stream using the received at least one firmware algorithm; and

means for transmitting the at least one packet of data over an Internet Protocol (IP) network.

85. (unchanged) The apparatus of claim 83, further comprising:

means for receiving at least one packet of data from an IP network;

means for generating at least one PCM data stream from the at least one packet of data using the received at least one firmware algorithm; and

means for transmitting the at least one PCM data stream over a PSTN.

86. (once amended) [A method, comprising:

continuously broadcasting a plurality of firmware algorithms to a plurality of DSP engines; and

selectively monitoring for and receiving at least one firmware algorithm from amongst the plurality of firmware algorithms by at least one of the plurality of DSP engines, wherein the at least one firmware algorithm is used to process data of at least one corresponding data type received by the at least one of the plurality of DSP engines.] The apparatus of claim 83 further comprising means for continuously broadcasting the plurality of firmware algorithms.

87. (once amended) [An apparatus, comprising:

a DSP engine that selectively monitors for and receives at least one firmware algorithm from amongst a plurality of firmware algorithms that are continuously broadcasted to the DSP engine, wherein the at least one firmware algorithm is used to process data of at least one corresponding data type received by the DSP engine.]

The apparatus of claim 83 wherein the means for selectively monitoring for and receiving at least one firmware algorithm further comprises:

means for determining a data type of the data received into at least one of the plurality of service DSP engines;

means for determining the at least one firmware algorithm;

means for determining an address of at least one broadcast channel where the at least one firmware algorithm is available.

Please add new claims 88 through 114 as provided below.

88. (new) The method of claim 87, wherein the means for selectively monitoring for and receiving at least one firmware algorithm further comprises means for unmasking a bit of an interrupt mask in the at least one of the plurality of service DSP engines, the unmasked bit corresponding to the address.

89. (new) The method of claim 88, wherein the means for selectively monitoring for and receiving at least one firmware algorithm further comprises:

means for executing at least one interrupt service routine in response to receiving an interrupt signal corresponding to the unmasked interrupt bit;

means for receiving the at least one firmware algorithm in response to execution of the interrupt service routine; and

means for storing the received at least one firmware algorithm in a memory of the service DSP.

90. (new) A method, comprising:

selecting a software routine from amongst a plurality of continuously broadcasted software routines that are each capable of being executed by a Digital Signal Processor (DSP); and

processing data that has been received from a network by executing the software routine upon the DSP.

91. (new) The method of claim 90 wherein the processing further comprises generating at least one packet of data from a PCM data stream, the PCM data stream corresponding to the data that has been received from a network.

92. (new) The method of claim 91 wherein the network is a PSTN network.

93. (new) The method of claim 91 wherein the data further comprises voice or audio data.

94. (new) The method of claim 90 wherein the selecting further comprises:

determining a data type for the data;

recognizing that the software routine can be used to process data having the data type;

determining where the software routine resides amongst the continuously broadcasted software routines.

95. (new) The method of claim 90 wherein the data further comprises voice data.

96. (new) The method of claim 90 wherein the data further comprises facsimile data.

97. (new) The method of claim 90 wherein the data further comprises modem data.

98. (new) The method of claim 90 wherein the processing further comprises echo cancellation.

99. (new) The method of claim 90 wherein the processing further comprises voice coding.

100. (new) The method of claim 90 wherein the processing further comprises suppression of packet bandwidth utilization during voice silence.

101. (new) The method of claim 90 wherein the processing further comprises modem relay.

102. (new) The method of claim 90 wherein the processing further comprises facsimile relay.

103. (new) A method, comprising:

selecting a software routine from amongst a plurality of continuously broadcasted software routines that are each capable of being executed by a Digital Signal Processor (DSP); and

processing data that is to be transmitted over a network by executing the software routine upon the DSP.

104. (new) The method of claim 103 further comprising:

generating a PCM data stream from at least one packet of data, the PCM data stream corresponding to the data that is to be transmitted over a network.

105. (new) The method of claim 104 wherein the network is a PSTN network.

106. (new) The method of claim 104 wherein the data that is to be transmitted over a network further comprises voice or audio data.

107. (new) The method of claim 103 where the selecting further comprises:

recognizing that the software routine is required to process the data;

determining where the software routine resides amongst the continuously broadcasted software routines.

108. (new) The method of claim 103 wherein the data further comprises voice data.

109. (new) The method of claim 103 wherein the data comprises facsimile data.

110. (new) The method of claim 103 wherein the data further comprises modem data.

111. (new) The method of claim 103 wherein the processing further comprises echo cancellation.

112. (new) The method of claim 103 wherein the processing further comprises voice coding.

113. (new) The method of claim 103 wherein the processing further comprises modem relay.

114. (new) The method of claim 103 wherein the processing further comprises facsimile relay.